TRANSMITTAL OF APPEAL BRIEF

Docket No.
DWH-11602/29

In re Application of: Shyam Keshavmurthy et al.

Application No.	Filing Date	Examiner	Group Art Unit
10/623,330-Conf. #3284	July 18, 2003	C. J. Barnes	2121

Invention: AUTOMATED RAPID PROTOTYPING COMBINING ADDITIVE AND SUBTRACTIVE PROCESSES

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: August 29, 2006 .

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[X] The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. 07-1180 .
This sheet is submitted in duplicate.

Dated: October 30, 2006

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of: Keshavmurthy et al.

Serial No.: 10/623,330 Group No.: 2121

Filed: July 18, 2003 Examiner: C. Barnes

For: AUTOMATED RAPID PROTOTYPING COMBINING ADDITIVE AND SUBTRACTIVE PROCESSES

APPELLANT'S BRIEF UNDER 37 CFR §1.192

Mail Stop Appeal Brief
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I. Real Party in Interest

The real party and interest in this case is Solidica, Inc., by assignment.

II. Related Appeals and Interferences

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

The present application was filed with 22 claims. Claims 5, 6, 8, 12-14 and 18 have been canceled. Claims 1-4, 7, 9-11, 15, 17, and 19-22 are pending, rejected and under appeal. Claim 1 is the sole independent claim.

IV. Status of Amendments Filed Subsequent Final Rejection

No after-final amendments have been filed.

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V. Summary of Claimed Subject Matter

Independent claim 1 is directed to an automated manufacturing method. The method comprises the steps of receiving a description of an object to be fabricated having a desired geometry and identifying regions in which at least one automated material addition process and at least one automated material subtraction process should occur to fabricate the object in accordance with the description. Toolpaths associated with the material addition and subtraction processes are generated, and the object is generated in accordance therewith. (Specification, page 4, line 27 to page 8, line 18).

VI. Grounds of Objection/Rejection To Be Reviewed On Appeal

A. The rejection of claim 9[1] under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,856,842 to Rebello et al.

B. The rejection of claim 9 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,463,349 to White et al.

VII. Argument

A. <u>The Rejection of claim 9 under 35 U.S.C. §102(e) over Rebello et al..</u>

Claim 9 adds to claim 1 the step of "blending the regions [in which at least one automated material addition process and at least one automated material subtraction process should occur] to eliminate seams that would be generated due to the subtractive process used."

Claim 9 stands rejected under 35 U.S.C. §102(b) over Rebello et al.

The Examiner's argument, on page 7 of the final Office Action, is that Rebello et al. teach the step of blending regions, citing column 3, lines 35-37, which read as follows:

> "Tooling geometry 62 is obtained from tooling features 132, for example, by applying tooling design rules that impose continuity or other matching conditions for adjoining tool features."

The Examiner argues that this is done "to eliminate seams ("adjuring tooling features") that would be generated due to the subtractive process ("material removal") used." However, this "disclosure" is synthesized by the Examiner, and is not found in the subject methods. In fact, column 3, lines 35-37 say

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1 Appellant is aware that claim 9 is dependent. Upon confirmation as to the allowability of claim 9 on appeal, Appellant will redraft claim 9 in independent form including all of the limitation of claim 1.

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nothing about the elimination of seams, let alone that such seams would be generated due to a subtractive process involving material removal. Since anticipation requires that a reference disclose each and every element or step of the invention as claimed, *prima facie* anticipation has not been established.

B. The Rejection of claim 9 under 35 U.S.C. §102(e) over White et al..

With regard to White et al., the Examiner argues that the limitations of claim 9 are met by the disclosure at column 7, lines 6-12, which reads as follows:

> "It may be desirable to conduct two trimming operations, where the first is a high-speed trimming operation, and the second is a contouring trim, designed to produce highly accurate and smooth surfaces on curved components, thereby eliminating the so-called stairstepping often found in additively manufactured components."

The Examiner again fabricates nonexistent disclosure, by stating that this is done "to eliminate seams ("each material application") that would be generated due to the subtractive process ("trimming operations") used." However, this is not the same as the limitations of the claim, which includes the step of blending regions to eliminate seams, these regions being ones in which at least one automated material addition process and at least one automated material subtraction process should occur. This is neither taught nor suggested by the cited passage of White et al.

Conclusion

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject application continue to be in condition for allowance and Appellant seeks the Board's concurrence at this time.

Respectfully submitted,

By:_____

Date: October 30, 2006

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APPENDIX A

CLAIMS ON APPEAL

1. An automated manufacturing method, comprising the steps of:

receiving a description of an object to be fabricated having a desired geometry;

identifying regions in which at least one automated material addition process and at least one automated material subtraction process should occur to fabricate the object in accordance with the description;

generating toolpaths associated with the material addition and subtraction processes; and

fabricating the object in accordance with the toolpaths.

2. The method of claim 1, wherein the regions are layers, volumes, lines or voxels.

3. The method of claim 1, wherein the automated material subtraction process includes milling or the use of lasers, knives, hot wires, arc cutters, or plasmas cutters.

4. The method of claim 1, wherein the automated material addition process includes solid-state or fusion welding, laser material deposition, metal spraying, or adhesive bonding.

7. The method of claim 1, further including the step of soft fixturing multiple parts.

9. The method of claim 1, further including the step of blending the regions to eliminate seams that would be generated due to the subtractive process used.

10. The method of claim 1, further including the step of creating enclosed and overhanging features using the additive or subtractive manufacturing processes, or a combination thereof.

11. The method of claim 1, further including the steps of:

identifying changes in the desired geometry;

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removing excess material to achieve the desired geometry.

15. The method of claim 1, further including the step of generating enclosed cavities within the object during the fabrication thereof.

17. The method of claim 1, further including the step of repairing an existing mold or other object.

18. The method of claim 1, wherein a tool path associated with additive processing is based on the nature of the additive process used.

19. The method of claim 1, further including the step of incorporating negative draft angles using the additive or subtractive processing.

20. The method of claim 1, further including the steps of:

generating finish paths that are dependent on the flute height of the smallest tool required; and

determining what Z height should be deposited and trimmed prior to finishing based on the flute height of the smallest tool required.

21. The method of claim 1, wherein:

certain features are deposited with excess stock based on feature geometry; and

removing material to enhance the deposition process, or speed the build rate of the object.

22. The method of claim 1, further including the step of generating a conformal support material containment structure.

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APPENDIX B

EVIDENCE

None.

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APPENDIX C

RELATED PROCEEDINGS

None.

PTO/SB/92 (09-06)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application No. (if known): 10/623,330 Attorney Docket No.: DWH-11602/29

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